

## CLAIMS

1. An equalizer, comprising:
  - a light distributor configured to distribute light signals received through an inlet side across an outlet side, each of the light signals being associated with a different wavelength;
  - optics configured so as to cause different light signals to separate as the light signals travel through the light distributor; and
  - a plurality of attenuators configured to attenuate the light signals in a region of the light distributor where the light signals are separated from one another.
2. The equalizer of claim 1, wherein the light distributor is configured to contract the light signals received through the inlet side to a focal point.
3. The equalizer of claim 2, wherein the optics configured so as to cause different light signals to separate causes different light signals to contract to focal points located at different regions of the light distributor.
- 4 <sup>JD</sup> ~~3.~~ The equalizer of claim 2, wherein the light distributor is configured to expand the light signals after the light signals travel past the point of contraction. <sub>12/29/03</sub>
- 5 <sup>4.</sup> The equalizer of claim 1, wherein the outlet side includes a plurality of outlet ports and the light distributor is configured to distribute the light signals across a plurality of the outlet ports.
- 6 <sup>5</sup> ~~5.~~ The equalizer of claim ~~4~~ <sup>5</sup>, wherein the outlet ports are in optical communication with an array waveguide grating.
- 7 <sup>5</sup> ~~6.~~ The equalizer of claim ~~4~~ <sup>5</sup>, wherein the array waveguide grating is in optical communication with an outlet light distribution component configured to direct light signals received from the array waveguide grating to a port of an output waveguide.

8 ~~7~~. The equalizer of claim 1, wherein the optics include an array waveguide grating.

9 ~~8~~. The equalizer of claim <sup>8</sup>~~7~~, wherein the optics are in optical communication with an input light distribution component configured to distribute light signals received from an input waveguide across ports of the array waveguide grating.

10 ~~9~~. The equalizer of claim 1, wherein at least one of the attenuators is configured to attenuate a plurality of light signals as the one or more light signals pass through the region of the light distributor where the light signals are separated from one another.

11 ~~10~~. The equalizer of claim 1, wherein the attenuators each include a plurality of electrical contacts positioned on the same side of the light distributor.

12 ~~11~~. The equalizer of claim 1, wherein the attenuators each include one or more electrical contacts positioned over the light distributor and one or more electrical contacts positioned under the light distributor.

13 ~~12~~. The equalizer of claim 1, wherein the light distributor is defined in a light transmitting medium positioned over a base.

14 ~~13~~. The equalizer of claim <sup>13</sup>~~12~~, wherein the base includes a pocket, the light distributor being positioned over the pocket.

15 ~~14~~. The equalizer of claim <sup>13</sup>~~12~~, wherein the base includes a pocket, portions of the pocket being positioned under one or more of the attenuators, the light transmitting medium contacting the base between at least two of the attenuators.

16 ~~15~~. The equalizer of claim 1, wherein the functional light distributor includes grooves between adjacent attenuators.

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17 ~~16~~. An equalizer, comprising:  
optics configured to separate a beam of light into light signals of different wavelengths; and  
a plurality of attenuators configured to attenuate the light signals after separation of the light signals, at least one of the attenuators configured to attenuate a plurality of the light signals.

18 ~~17~~. The equalizer of claim <sup>17</sup>~~16~~, wherein the optics include an array waveguide grating in optical communication with a light distributor, the light distributor configured to distribute light signals received from the array waveguide grating across a plurality of outlet ports.

19 ~~18~~. A method of operating an equalizer, comprising:  
separating a light beam into a plurality of light signals of different wavelengths; and  
employing a plurality of attenuators so as to attenuate the intensity of the light signals, at least one of the attenuators employed so as to attenuate a plurality of the light signals.